

LETTER  
FROM  
THE SECRETARY OF WAR,  
TRANSMITTING

*Papers relative to the payment of first installment of compensation to Mr. James B. Eads for maintenance of channel at South Pass, Mississippi River, for quarter ending October 30, 1879.*

JANUARY 19, 1880.—Ordered to lie on the table and be printed.

WAR DEPARTMENT,  
*Washington City, January 16, 1880.*

To the PRESIDENT OF THE SENATE:

SIR: I have the honor to transmit herewith papers concerning the payment of the first installment of the annual compensation to Mr. James B. Eads, for maintenance of the channel at the South Pass, Mississippi River, for the quarter ending October 30, 1879, and to recommend that the papers be printed for the information of Congress.

ALEX. RAMSEY,  
*Secretary of War.*

WASHINGTON, D. C., *July 23, 1879.*

Hon. G. W. McCrary,  
*Secretary of War, Washington, D. C.:*

(Through Brig. Gen. H. G. Wright, Chief of Engineers, U. S. A.)

SIR: Now that Mr. Eads has attained to the consummation of the first grand stage in the improvement of South Pass, by procuring a minimum midchannel depth of 30 feet, with a depth of 26 feet throughout a width of more than 200 feet in the narrowest part of the channel, at the mouth of South Pass, and at the head of the pass, a least depth of over 26 feet, in a navigable channel; and as the second stage of his improvement has just been entered on, involving the maintenance of the channel as prescribed by law, for twenty years, with loss of compensation for such periods of time as shall elapse without the maintenance of specified channel dimensions, it has become indispensable that certain methods for ascertaining the length of possible lapses in this maintenance shall be adopted, and also that such provisions of the law as relate to the preservation of the channel and are capable of more than one interpretation shall be clearly defined.

There seems to be more or less ambiguity in one or more important particulars when we consider, together with the acts of Congress relating to the improvement, the reports of various commissions which have

been adopted by the War Department, and the decisions or opinions of the various law-officers of the government. The two questions which at present press for an answer are as follows:

Is dredging allowable as a means of maintaining the channel; it having been clearly and repeatedly sanctioned as an auxiliary method by which the various depths and widths of channel, which were necessary precedents to the payment of the several installments of money, were obtained?

Without instructions to the contrary it would seem to be a natural inference that all the means heretofore used to obtain the channel might also be employed in its maintenance.

Second. Is the maintenance at the head of South Pass of a navigable channel, having a minimum depth of 26 feet, equally necessary with the maintenance of a channel at the mouth of the pass 26 feet deep for a width of 200 feet, and having a least depth in the middle of 30 feet, in order to entitle Mr. Eads to his quarterly allowance, and ultimately to the one million dollars of retained money?

As regards the method of ascertaining possible lapses in the maintenance of the required channel, I am at present able to have surveys made weekly, and unless an epidemic should partially disorganize my party I had proposed to adopt that course for the present. It becomes important to know what rules shall be observed in estimating the length of possible failures to maintain the prescribed channel. I assume that the required channel will be supposed in existence between the dates of two surveys if it were found in the earlier of the two, and that if the second survey shows a deficiency it will be my duty to notify Mr. Eads's representative and to certify the fact to the Secretary of War. Then, if dredging is allowable and Mr. Eads shall, by means of his dredgeboat, renewedly obtain the prescribed channel, that it will be my duty to make another survey, and to again certify to the results, if they differ essentially from those of the former survey. Having restored the channel no further survey would be needed for another week, unless some occurrence should induce a suspicion of further shoaling. The decision of the honorable Secretary of War approving or modifying these general rules, and in answer to the two questions propounded, is respectfully requested.

Very respectfully, your obedient servant,

M. R. BROWN,

*Captain Engineers, U. S. A.*

---

OFFICE CHIEF OF ENGINEERS,

*Washington, August 1, 1879.*

Respectfully forwarded to the honorable the Secretary of War.

Dredging, or stirring, as an auxiliary in obtaining a channel through the jetties, was deemed advisable by the commission of 1874, which submitted a plan for the improvement of the South Pass, and the special board, in its report of January 5, 1878, also considered dredging admissible as an auxiliary to the jetties and other works provided for in the act, in obtaining the required channel. It may be readily admitted that, with the jetties essentially completed, the power of the confined current might be able to maintain a channel, when found, which it could not obtain unaided, or only after long-continued action, and that it would be desirable and even indispensable to aid the action of the current in removing hard spots, angles, &c., by some auxiliary means like dredging or stir-

ring up the material of the bottom. I do not think, however, that the inference drawn by Captain Brown from this sanctioning of dredging, in *obtaining* the channel, necessarily extends to its *maintenance*.

As regards his second question, it seems evident that the real purpose of the act of 1875 was to both make and maintain a deep, navigable channel through the South Pass, including that over the shoal at its head, and the maintenance of the latter is just as essential as is that at the mouth. The specific requirements as to maintenance in the act seem, however, to be confined to the channel between the jetties at the mouth of the pass. A legal opinion upon the act, as applying to these two questions, should, I think, be obtained.

The general rules proposed by Captain Brown for regulating the frequency of surveys seem to me to be satisfactory, and are recommended for approval.

Printed reports of boards, dated November 19, 1876, and January 5, 1878, in which certain passages are marked in the margin, are submitted herewith.

H. G. WRIGHT,  
*Chief of Engineers, Brigadier and Brevet Major General.*

---

[Extract from printed report of Board, dated November 19, 1876.]

\* \* \* \* \*

"QUERY 1. Is the shoal at the head of the South Pass a part of that pass or of the main Mississippi River?"

"If Mr. Eads obtains a channel twenty feet in depth in the South Pass, exclusive of this shoal, is he entitled under the law to his first payment of half a million dollars?"

In answer to the first paragraph of the foregoing, we would say that this shoal is not exclusively a part of the South Pass, for it extends entirely across the river from shore to shore. It is, therefore, a shoal common to all three of the passes; but the channel (or channels) through this shoal, by which access has been had or is to be had in future from the river above into the South Pass, is a part of that pass. This construction we believe to be in harmony with the views of the commission of 1874, which estimated the total length of the "South Pass" at 12.9 miles, thus embracing the entire distance from the deep water in the river above to deep water in the Gulf.

To the second paragraph of this query we answer, Yes; provided the depth so obtained has a bottom width required by the fifth section of the act of Congress.

The obligation of the United States to pay half a million of dollars on obtaining a channel twenty feet in depth, and of not less than two hundred feet in width, is expressed in that section in terms which apply exclusively to the "wide and deep channel between the South Pass of the Mississippi River and the Gulf of Mexico." The obligations of Mr. Eads in reference to the shoal at the head of the pass are expressed in the second proviso of section 4 of the act, the language of which provides all necessary guarantees, and is the only language of the law defining depths, &c., which does apply to this shoal.

"QUERY 2. What depth and width of channel is it desirable to secure permanently through this shoal?"

The second proviso to section 4 of the act demands a navigable depth "through said pass," and, of course, through this shoal, of "twenty feet" within thirty months; and "an additional depth of not less than two feet during each succeeding year thereafter, until twenty-six feet shall have been secured." We deem these depths to be satisfactory; and, considering that an inland channel requires less depth for equal facility of navigation than a sea-exposed bar, that they are fairly equivalent to the greater depths demanded by the act in its fifth section for the "wide and deep channel connecting the pass with the Gulf of Mexico."

With regard to the width of channel through this shoal, it is probable that all the necessities of commerce would be satisfied, at least for a time, by a width sufficient for the passage of a single vessel. One hundred feet would suffice for this purpose. We deem it desirable to provide ultimately a channel wide enough for two large ships to pass each other when under full headway, without danger of collision. This would require a bottom-width of, say, two hundred feet. Though this is somewhat greater than is now to be found in reaches of considerable length in the body of the South Pass itself, below Grand Bayou, we recommend it as a desirable width to be secured.

\* \* \* \* \*

ract from report of Board, dated January 5, 1878. Ex. Doc. No. 37, H. R., 45th Congress, 2d session

Section 5 of same act provides (among other things) that "when a channel of twenty feet in depth and of not less than two hundred feet in width shall have been obtained by the action of said jetties and auxiliary works, five hundred thousand dollars shall be paid; and when a channel of twenty-two feet in depth and two hundred feet in width shall have been obtained by the action of said jetties and auxiliary works, five hundred thousand dollars shall be paid," &c.

We have already, in our answer to the first interrogatory, reported that a channel "twenty-two feet in depth and two hundred feet in width" has been obtained. The interrogatory now to be answered is, "has such depth and width been obtained by the action of such jetties and auxiliary works as are contemplated by the terms of the act of Congress?"

The condition of payment, *i. e.*, that the specified depth and width shall be obtained by the action of "such jetties and auxiliary works," leads us into the consideration of what is meant by auxiliary works. As *these*, in the language of the law, are coupled with the "permanent and sufficient jetties" which are to be constructed, and as further on he is more specifically authorized to *construct* in the river outlet or pass, and likewise in the Gulf of Mexico, "such walls, jetties, dikes, levees, and other structures," &c., all of which appear to be structures fixed in location and attached to the bottom of the river, outlet, or pass, or as levees to the dry land, a rigid interpretation would appear to exclude the use, or rather to prohibit payment for channel depths and widths obtained with the *aid* of the well-known processes of "scraping," "stirring up the bottom," or "dredging," and there can be no doubt that had either or all of these last-named means been the main agent or agents of obtaining the specified depths, payment could not, under the conditions of the law, be made for channel widths and depths so obtained, the jetty principle being notoriously the principle to be applied by the grantee.

If, however, we refer to authoritative statements of the methods of applying that principle, we find it stated in the *Physics and Hydraulics of the Mississippi River* (p. 489, *reprint*), in treating of the "Plan of jetties," that the "erosive action should be aided at first by dragging and scraping the hard portion of the bar."

The Board of Engineers appointed by the President of the United States, under the act of Congress of June 23, 1874, to make "a survey of the mouth of the Mississippi River, with a view to determine the best method of obtaining and maintaining a depth of water sufficient for the purposes of commerce, either by a canal from the said river to the waters of the Gulf or by deepening one or more of the natural outlets of said river," in recommending the opening of the South Pass by the application of the jetty system, states, "by aiding, if necessary, by dredging, we should be able to reduce at pleasure the time required for the process"; and again: "This plan is then adopted, \* \* \* to begin parallel dikes (*i. e.*, jetties) at the banks, and carry them over the bar to 30 feet water outside, \* \* \* allowing the river to erode the bottom between the dikes, \* \* \* aiding the erosion by dredging or stirring, if it is not rapid enough." And in appendix to their report an item of \$250,000 is found as the "estimated cost of dredging or stirring in aiding formation of channel between the jetties and at the Head of the Pass."

The object of the act we are now considering is to "create and permanently maintain a wide and deep channel between the South Pass of the Mississippi River and the Gulf of Mexico"; and the Board of Engineers alluded to having been constituted expressly to determine the best manner of creating and maintaining such a channel, after having personally examined the most important works of Europe, recommended the jetty plan to be applied to the South Pass; and the report and estimate of that board being the basis upon which the compensation to Eads and associates was determined, we do not doubt that the real intention of the proviso in question was that jetties and auxiliary works should be the *effectual* agents of obtaining the "wide and deep channel" intended, while at the same time the references we have made show that dredging is a legitimate auxiliary.

We conceive, therefore, that the true intent of the proviso does not prohibit the auxiliary aid of dredging; that its spirit is as above defined; and that, indeed, in the authorizing of the employment of such boats, rafts, and appliances as he may, in the "prosecution of said work, deem necessary," *allows* dredging, and should not prohibit payment for channel widths and depths which the jetties and auxiliary works have, to all intents and purposes, really created, and to which dredging has been slightly auxiliary.

If we look at the actual facts presented by the prosecution of this work, we find that where, two and a half years ago, there was a bar at the mouth of the South Pass of over two miles of extent measured from 22 feet water inside to the same depth outside, over about half a mile of which there was but eight feet of water, a "wide and deep channel" of 22 feet depth now exists, and a result inferior in physical magnitude

but no less in importance at the Head of the Passes has been obtained. And these results are so exclusively due to the "jetties and auxiliary works," that the auxiliary aid of "appliances," if in such we include dredging-machines, is utterly insignificant, consisting mainly, indeed, in a slight widening at two points and widening and deepening at a third. By the erosion of the current, due entirely to the jetties and their fixed auxiliaries, about two and one half millions of cubic yards of bottom material have been removed, leaving in its place the "wide and deep channel." Of this amount, one million of cubic yards have been removed by the same agency since the twenty feet of depth on the bar was obtained. By the action of the dredgeboats (see Captain Brown's recent report to the honorable Secretary of War), from twelve to twenty-eight thousand cubic yards have nominally been removed by dredging. But it cannot positively be asserted that to the creation of the channel now existing even this insignificant amount has been contributed by dredging. It is pertinent to remark, in this connection, that the creating of the 200 feet width of the 20-foot channel, for which payment has already been made, is officially reported to have been, to a small extent, aided by dredging. (See Major Comstock's sixth report.)

We have discussed the point of dredging at much length, because we conceive it to be the real one involved in the third interrogatory; and we conclude by answering that, according to the construction above given, the depth and width of channel has been obtained by the action of such jetties and auxiliary works as are contemplated by the terms of the act of Congress.

\* \* \* \* \*

WAR DEPARTMENT, August 7, 1879.

The views of the Chief of Engineers are concurred in and his recommendations approved.

G. W. McCrary,  
*Secretary of War.*

OFFICE CHIEF OF ENGINEERS,  
Washington, August 18, 1879.

Respectfully returned to the honorable the Secretary of War.

H. G. Wright,  
*Chief of Engineers, Brig. and Bvt. Maj. Gen.*

Respectfully returned to the Chief of Engineers. The indorsement of the 7th instant hereon is hereby modified so as to read as follows:

"The views of the Chief of Engineers are concurred in and his recommendations are approved," so far as they relate to "the general rules proposed by Captain Brown for regulating the frequency of surveys."

G. W. McCrary,  
*Secretary of War.*

WAR DEPARTMENT, August 20, 1879.

67 GARDEN STREET,  
Lawrence, Mass., October 15, 1879.

Hon. G. W. McCrary, *Secretary of War, Washington, D. C.:*  
(Through Brig. Gen. H. G. Wright, Chief of Engineers, U. S. A.)

SIR: I inclose herewith my certificate that Mr. Eads has maintained the prescribed 26 and 30 feet channels at the mouth of South Pass, Mississippi River, from July 8 to October 8, 1879, excepting 20 days when he failed to maintain one or both of the prescriptions at some point, &c.

The dredge "G. W. R. Bayley" has worked in all 190½ hours, dur-

ing this period, of which 111½ hours were for the purpose of maintaining the prescribed channel unimpaired, and 79 hours were devoted to restoring at various points channels which had previously deteriorated below the designated standard.

Very respectfully, your obedient servant,

M. R. BROWN,  
*Captain Engineers, U. S. A.*

LAWRENCE, MASS., *October 15, 1879.*

*Certificate of maintenance of channel prescribed by law, at South Pass, Mississippi River, to entitle James B. Eads to payment for such maintenance.*

I certify that the maintenance, by James B. Eads and his associates, of a channel through the jetties at the mouth of South Pass, Mississippi River, 26 feet in depth and not less than two hundred feet in width, at the bottom, and having through it a central depth of thirty feet, without regard to width, has been accomplished, from July 8 to October 8, 1879, with the exception of twenty days, when a failure in some part to maintain such a channel occurred. The failure was on the 14th, 15th, 16th, and 17th of August, for the first period, and from August 27 to September 11, inclusive, for the second period. During the whole of the interval from July 8 to October 8, 1879, a navigable channel having a greater depth than twenty-six feet has been maintained at the Head of South Pass, and throughout that interval of time the twenty-six feet channel has been at all times and in all places, here, at least one hundred and ninety feet wide.

M. R. BROWN,  
*Captain Engineers, United States Army.*

OFFICE CHIEF OF ENGINEERS,  
*Washington, October 17, 1879.*

Respectfully transmitted to the honorable the Secretary of War.

H. G. WRIGHT,  
*Chief of Engineers, Brigadier and Brevet Major-General.*

Respectfully returned to the Chief of Engineers. The President desires the Chief of Engineers to report the extent of the variation during the time Captain Brown reports that the channel was not maintained to the requirements of the law.

GEO. W. McCRARY,  
*Secretary of War.*

WAR DEPARTMENT, *October 31, 1879.*

OFFICE CHIEF OF ENGINEERS,  
*Washington, November 1, 1879.*

Respectfully referred to Capt. M. R. Brown, Corps of Engineers, for prompt report.

H. G. WRIGHT,  
*Chief of Engineers, Brigadier and Brevet Major-General.*

LAWRENCE, MASS.,  
*November 3, 1879.*

Brig. Gen. H. G. WRIGHT,  
*Chief of Engineers, United States Army, Washington D. C.:*

SIR: In compliance with instructions contained in the indorsement of the Chief of Engineers dated November 1, 1879, on the communication

herewith returned, which inclosed and transmitted my first certificate of maintenance by James B. Eads of the prescribed channels at South Pass Mississippi River, I have the honor to report as follows "on the extent of the variation during the time" I reported "that the channel was not maintained to the requirements of the law."

The minimum conditions to which the channel deteriorated from the 14th to the 17th of August, 1879, inclusive, and from the 27th August to September 11, 1879, inclusive, are indicated in the following statements applying to the mouth of South Pass.

*August 14.*—Opposite station 20 the 30 feet channel was lacking for about 125 feet in length and the least depth of water in the best channel was 28.5 feet.

*August 15.*—On the bar just inside the last wing-dam the 30-foot channel was lacking for about 90 feet in length and 27.8 or 28 feet were indicated as present although a sounding was lacking in the place needed to show a continuous line of that depth available for navigation.

In the same vicinity at the same date the 26-foot channel was deficient in width for about 210 feet in length, its least width being about 155 feet.

*August 27.*—The 30-foot channel near station 74 was lacking for about 130 feet in length, the least depth in the deepest channel was 28.8 feet.

*August 28.*—At the same place the 30-foot channel had closed up so that it was lacking for only 30 feet, and 29.5 feet was found in the deficient interval.

*August 28.*—Just above the upper wing-dams, near station 10, the 30-foot channel was lacking for about 500 feet in length, and 28.7 feet was found as the least depth in the intervals for the deepest channel.

*August 28.*—Between near stations 10 and 20 for 800 or 900 feet in length, the 26-foot channel was less than 200 feet wide, its least width being about 150 feet.

*September 4.*—Near station 10 the 30-foot channel was lacking for about 150 feet, and about 29 feet were present.

Very respectfully, your obedient servant,

M. R. BROWN,  
*Captain of Engineers, U. S. A.*

---

LAWRENCE MASS., November 3, 1879.

CHIEF OF ENGINEERS U. S. A.

*Washington, D. C.:*

SIR: I send by this mail charts which refer to the condition of the channel at South Pass, at the times referred to in my letter of this date accompanying. These are the only copies with me, and if convenient I would like to have them returned,

Very respectfully, your obedient servant,

M. R. BROWN,  
*Captain of Engineers, U. S. Army.*

---

WAR DEPARTMENT,  
*Washington, D. C., November 7, 1879.*

Hon. CHARLES DEVENS,

*Attorney-General:*

SIR: I have the honor to ask your opinion upon certain questions touching the laws including amendatory acts, which authorize Captain

James B. Eads and his associates, on certain conditions "to construct such permanent and sufficient jetties, and such auxiliary works as are necessary to create and permanently maintain \* \* \* a wide and deep channel between the South Pass of the Mississippi River and the Gulf of Mexico," and which, on compliance with the conditions set forth, obligate the United States to pay said Eads or his legal representatives certain sums of money, the questions being as follows:

1. Does the law allow the use of dredgeboats in the "maintenance by said Eads and his associates, of a channel through the said jetties," or does it require that the channel shall be "maintained by said Eads and his associates by the effect of said jetties and auxiliary works" without the use of dredgeboats?

2. Under the circumstances stated in the engineer's certificate of October 15, 1879, herewith, are the legal conditions in reference to maintenance of the specific channel so far complied with as to legally deserve a quarterly payment for maintenance of the channel?

3. What is the meaning of the law wherein it says the hundred thousand dollars "shall be paid in equal quarterly payments during each and every year," and wherein it further says, provided that "no part of such annual compensation shall be paid for any period of time during which the channel of said pass shall be less" than the required depths and widths?

4. In the event that the maximum channel required by law has not been maintained during the twenty days specified in Captain Brown's report, can payment be made for maintenance during the remainder of the quarter?

I inclose herewith for your information the original certificate and letter of Captain Brown, dated October 15, 1879, and also a report with charts from that officer, dated 3d instant, which papers I will thank you to return.

Very respectfully, your obedient servant,

GEO. W. McCRARY,  
*Secretary of War.*

DEPARTMENT OF JUSTICE,  
Washington, November 12, 1879.

Hon. GEORGE W. McCRARY,  
*Secretary of War:*

SIR: I have carefully read your communication of the 7th instant, and, in connection therewith, the argument of the counsel of Mr. Eads.

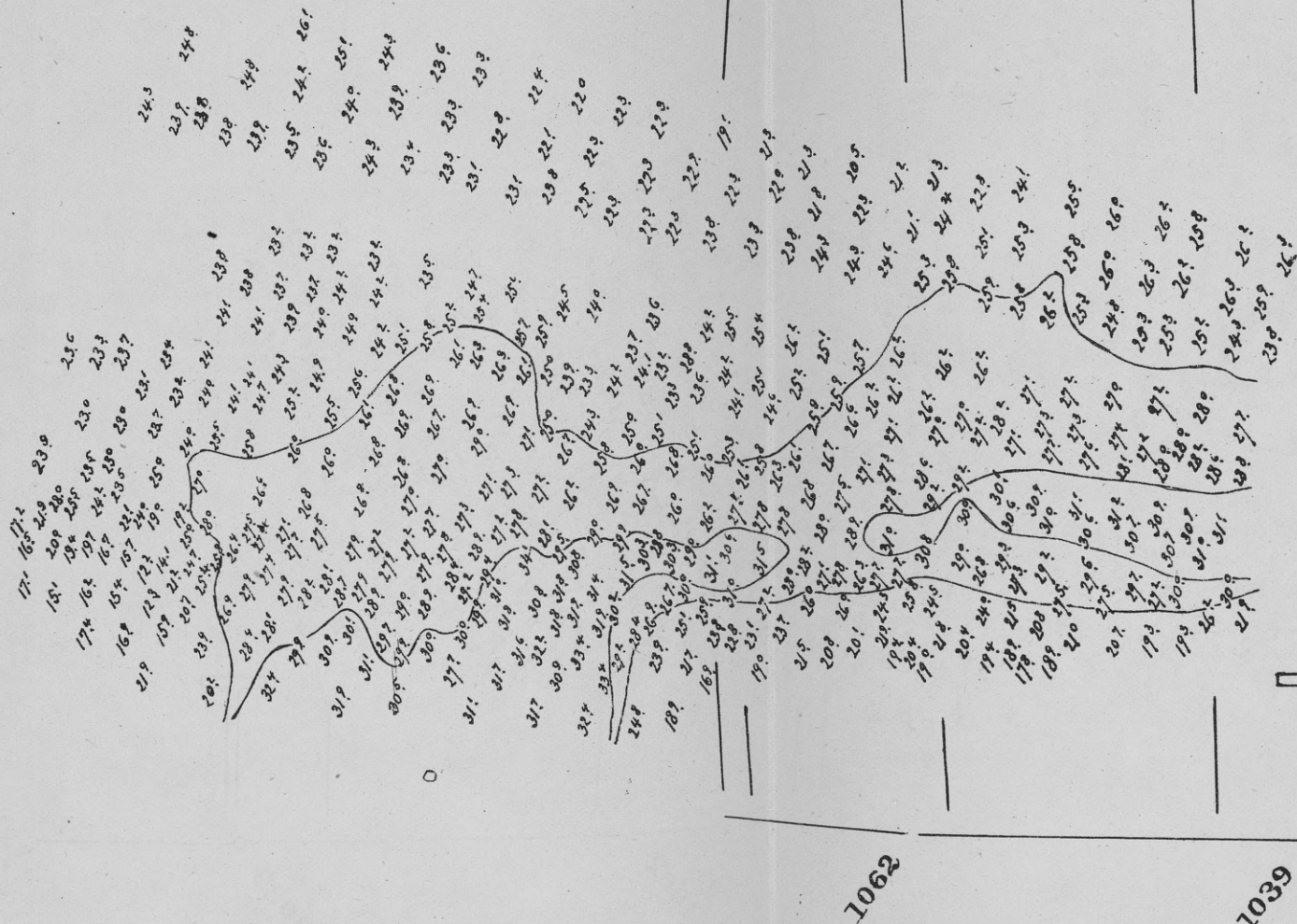
All the inquiries relate to the law, including amendatory acts, which authorizes Captain Eads and his associates, on certain conditions, "to construct such permanent and sufficient jetties and such auxiliary works as are necessary to create and permanently maintain \* \* \* a wide and deep channel between the South Pass of the Mississippi River and the Gulf of Mexico," and which, on compliance with the conditions set forth, obligate the United States to pay said Eads or his legal representatives certain sums of money.

The first inquiry is as follows:

1. Does the law allow the use of dredge-boats in the "maintenance by said Eads and his associates of a channel through said jetties," or does it require that the channel shall be "maintained by said Eads and his associates by the effect of said jetties and auxiliary works" without the use of dredgeboats?



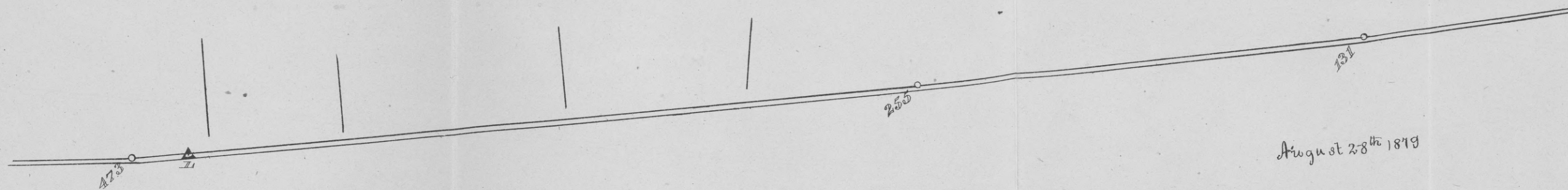
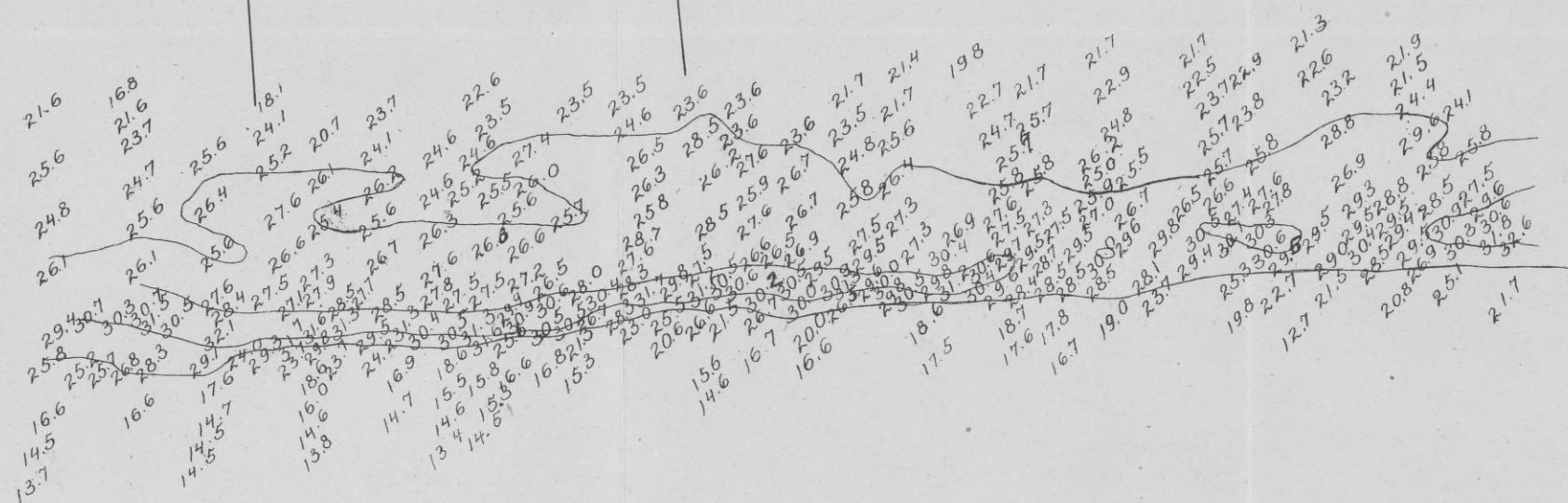
S. Ex. 44-29.



August 15<sup>th</sup> 1879

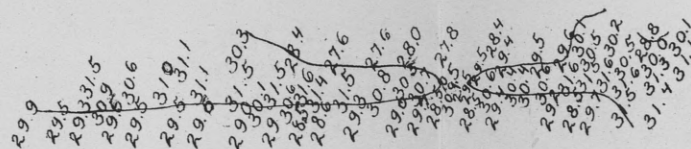


Kipp



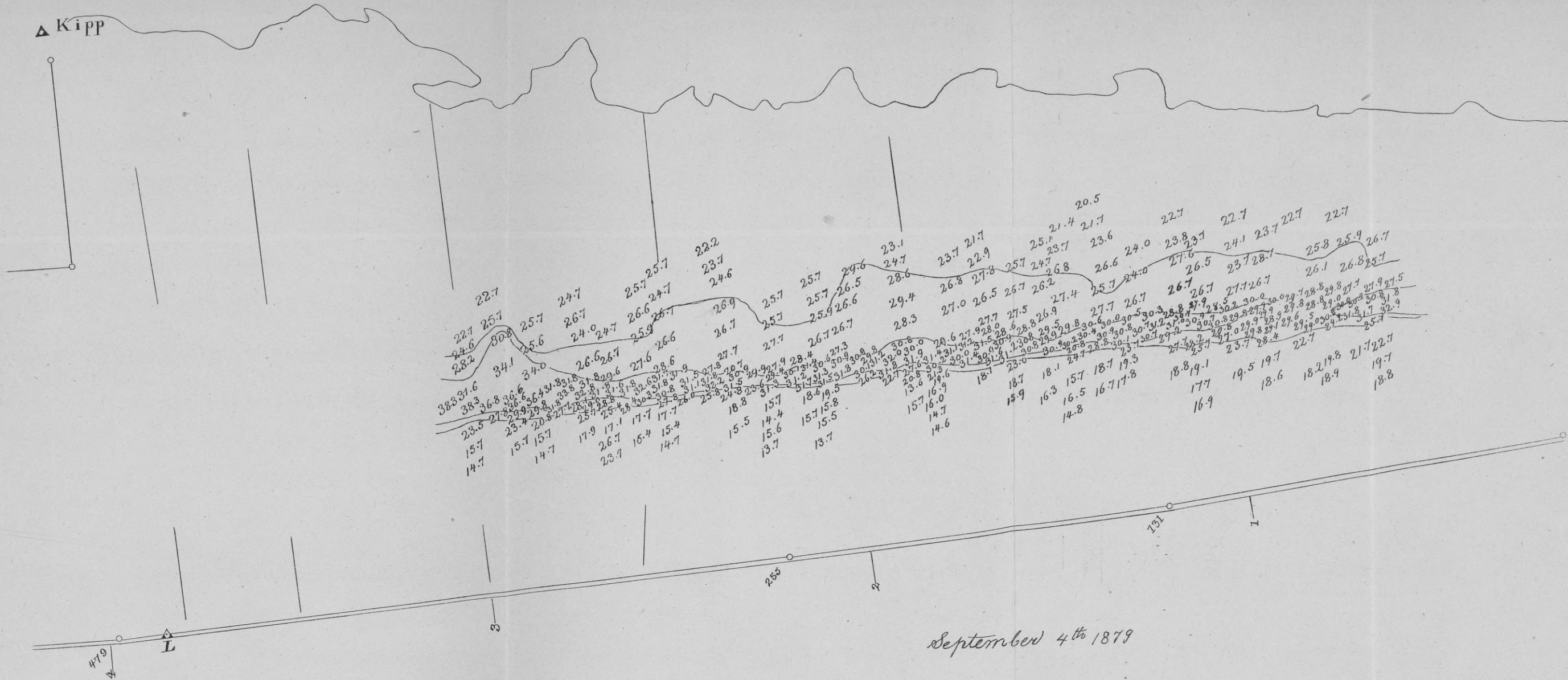
August 28<sup>th</sup> 1879

S.Ex. 44-31.



August 28<sup>th</sup> 1879

△ Kipp



S. Ex. 44-33



The question whether, under the law, dredging is permissible as auxiliary to the general plan of Captain Eads, which was that of obtaining and maintaining by the use of jetties, or artificial walls, a navigable channel, has been heretofore considered by the War Department in connection with the inquiry whether the channel might be obtained by the use of such aid; and it was held by the Secretary of War, in conformity with the report of two distinguished officers of the Engineer Corps, that such aid might properly be used by Captain Eads, and that its use would not deprive him of the compensation to which he would otherwise be entitled under the acts of Congress.

I have no reason to question the correctness of this decision; and it seems to me that the principle established by it leaves the inquiry as to the use of dredgeboats in maintaining the channel which has been created one of administration only. The channel is to be maintained "by the effect of said jetties and auxiliary works." If the use, therefore, of dredgeboats is strictly "auxiliary," while the general plan of the proposed improvement of Captain Eads is preserved, such use should not prevent him from receiving his compensation.

On reference to the report of the special commission, of date January 13, 1875, included in the report of the Chief of Engineers [Report of Secretary of War, vol. 2, part 1, 1875-'76], it will be seen that the use of dredgeboats as an auxiliary was contemplated. I refer also to the report of Generals Barnard and Wright [Ex. Doc. H. R. No. 37, 45th Cong., 2d sess.]

It would seem from an examination of the various reports upon this subject that it was contemplated that, in order to preserve the channel which would be obtained, extensions of the jetties themselves might from time to time become necessary during the period in which Capt. Eads was to maintain the channel.

It is therefore a question whether or not the use of dredgeboats in this connection was appropriate as an auxiliary in the plan of Captain Eads as adopted by Congress in the acts authorizing the improvement of the Mississippi River. This question is one which the Secretary of War will of course determine upon the information and opinion of the officers of the Engineer Corps. In such determination I can render him no assistance.

The second, third, and fourth questions (which may be conveniently considered together) are as follows:

2. Under the circumstances stated in the engineer's certificate of October 15, 1879, herewith, are the legal conditions in reference to maintenance of the specific channel so far complied with as to legally deserve a quarterly payment for maintenance of the channel?

3. What is the meaning of the law wherein it says the hundred thousand dollars "shall be paid in equal quarterly payments during each and every year," and wherein it further says provided that "no part of such annual compensation shall be paid for any period of time during which the channel of said pass shall be less" than the required depths and widths?

4. In the event that the maximum channel required by law has not been maintained during the twenty days specified in Captain Brown's report, can payment be made for maintenance during the remainder of the quarter?

The report of the engineers shows that there was a period of twenty days during the then current quarter when the required depths and widths of channel were not maintained. It is conceded by the counsel for Captain Eads that for that period he is not entitled to receive the quarterly compensation provided for by the act. But his contention is that he is entitled to receive at the end of the quarter such compensation, deducting therefrom the proportion which twenty days bears to the whole quarter.

One proviso in relation to payments for maintaining the channel is as follows:

*Provided, however, That no part of such annual compensation shall be paid for any period of time during which the channel of said pass shall be less than 30 feet in depth and 350 feet in width, as hereinbefore specified.*

The depths and widths have been changed by subsequent acts; but any inquiry growing out of such change is not relevant to our present examination.

On examining a subsequent section, which provides for payment of expenditures in excess of annual payments where Captain Eads shall make satisfactory proof that such expenditures have been made, is found this clause:

*And such payments shall be made from the \$500,000 to be released at the end of ten years before any payment shall be made from the \$500,000 to be released at the end of twenty years; and if any failure to maintain said channel of 30 feet in depth and 350 feet in width shall occur, the date for releasing the said money held in pledge shall be postponed for an equal period of time, and the compensation for maintaining said channel shall cease until said depth and width shall be again restored, the maintenance of a channel of 30 feet in depth and 350 feet in width for twenty years, exclusive of all such periods of failure, being intended by this act.*

It will be observed that the plan for compensation to Mr. Eads for maintaining the channel was by a system of quarterly and annual payments for a period of ten years when a certain sum of \$500,000 was to be released to him, and subsequently upon the maintenance by him of the channel for an additional period of ten years, he receiving certain quarterly and annual payments, at the end of that time another \$500,000 was to be released to him. The sum of \$1,000,000 was thus, as it were, kept in pledge by the United States for the performance by Captain Eads of his full contract, which was to maintain, as well as obtain, the channel proposed by the act. On examining these provisions together, the plan is shown to be one in which the ten years was not to be held to have expired by the expiration of ten calendar years from the time of obtaining the channel. When, therefore, the meaning of quarterly and annual payments is to be considered, it is to have reference to the periods during which the channel is maintained. If there is a period in any quarter, or in any year, during which the channel is not maintained, that period is not only to be deducted in the quarterly or annual payment, but the quarterly or annual payment is to be postponed by reason of such non-maintenance. In this mode the expiration of the ten years is necessarily postponed by a time equal to those periods during which the channel is not maintained, and Captain Eads is not only subject to the deduction (which it is agreed by his counsel ought properly to be made) of the time during which the channel is not maintained, but also to a corresponding postponement of his payments. To apply this principle (which an examination of the whole act, as well as of the provisions to which I have been particularly referred, satisfies me is correct) in the present case: As there were twenty days during a quarter when the channel was not maintained, the time when Captain Eads is to receive the quarterly payment is to be postponed for twenty days. He will then receive a full quarterly payment. No deduction will be made excepting that which is involved in the fact that he receives no money for the time when the channel was not maintained. His quarterly payment would have become due on October 8, 1879, but during twenty days he was entitled to no payment. The payment must, therefore, be postponed until the 28th of October, when, if he shall then have maintained the channel for a quarter, exclusive of the periods of failure, he

will be entitled to the quarterly payment. The words "quarterly" and "annual" in their application to the payments are thus construed with relation to the time during which the channel is maintained, and such construction is clearly necessary in order to meet the exigency of that portion of the statute which requires the release of the money held in pledge to be postponed for a period of time equal to that during which the requisite depths and widths were not maintained.

Very respectfully, your obedient servant,

CHAS. DEVENS,  
*Attorney-General.*

OFFICE OF THE CHIEF OF ENGINEERS,  
*Washington, D. C., November 15, 1879.*

Capt. M. R. BROWN,  
*Corps of Engineers, Lawrence, Mass. :*

SIR: There is inclosed herewith a copy of an opinion of the Attorney-General, of date November 12, 1879, upon the use by James B. Eads of dredge-boats as aids to the maintenance of the channel heretofore obtained at South Pass, Mississippi River; upon the claim of Mr. Eads for the first quarterly payment for its maintenance; the construction of the laws governing the improvements, &c., which I transmit for your information.

You will please furnish, in accordance therewith, a certificate, to include the three months' actual time during which the channel may have been maintained to the width and depth required by the acts of Congress. The certificate will also state the condition of the channel during the times in which it falls short of the width and depth specified in the acts referred to—as was done in the last certificate submitted, that of November 3, 1879.

Very respectfully, your obedient servant,

H. G. WRIGHT,  
*Chief of Engineers, Brigadier and Brevet Major General.*

LAWRENCE, MASS.,  
*November 18, 1879.*

Hon. G. W. McURARY,  
*Secretary of War, Washington, D. C. :*

(Through Brig. Gen. H. G. Wright, Chief of Engineers, U. S. A.)

SIR: I transmit herewith, in compliance with the instructions of the Chief of Engineers, dated November 15, 1879, my certificate that Mr. James B. Eads has maintained the prescribed 26-foot and 30-foot channels, at the mouth of South Pass, Mississippi River, during three months which are included between the dates July 8 and October 30, 1879; the three intervals when a failure occurred being designated, and the failures described in the certificate.

Very respectfully, your obedient servant,

M. R. BROWN,  
*Captain Engineers, U. S. A.*

LAWRENCE, MASS., November 18, 1879.

*Certificate of the U. S. Engineer inspecting officer of the first quarter's maintenance, in 1879, by James B. Eads, of the 26 and 30 feet channels at the mouth of South Pass, Mississippi River, designated by the several acts of Congress.*

I certify that, between the dates of July 8, 1879, and October 30, 1879, Mr. James B. Eads maintained a channel, for three months, through the jetties at the mouth of South Pass, Mississippi River, 26 feet in depth and not less than 200 feet in width at the bottom, and having through it a central depth of 30 feet, without regard to width.

During the aforesaid interval of time there were 22 days when a failure occurred, in some part, to maintain intact such a channel. This failure was on the 14th, 15th, 16th, and 17th of August, for the first period, from August 27 to September 11, inclusive, for the second period, and from October 23d to the 25th, two days, for the third period.

During the whole of the interval from July 8 to October 30, a freely navigable channel, having a greater depth than 26 feet, has been maintained at the head of South Pass.

The minimum conditions to which the channel deteriorated from the 14th to the 17th of August, 1879, inclusive, and from the 27th of August to September 11, inclusive, and for the two days from October 23 to 25, are indicated in the following statements, applying to the mouth of South Pass:

*August 14.*—Opposite station 20 the 30-foot channel was lacking for about 125 feet in length, and the least depth of water in the best channel was 28.5 feet.

*August 15.*—On the bar, just inside the last wing-dam, the 30 feet channel was lacking for about 90 feet in length, and 27.8 feet or 28 feet were indicated as present, although a sounding was lacking in the place needed to show a continuous line of that depth available for navigation.

In the same vicinity, and at the same date, the 26-foot channel was deficient in width for about 210 feet in length, its least width being about 155 feet.

*August 27.*—The 30-foot channel near station 74 was lacking for about 130 feet in length; the least depth in the deepest channel was about 28.8 feet.

*August 28.*—At the same place the 30-foot channel had closed up, so that it was lacking for only 30 feet, and 29.5 feet was found in the deficient interval.

*August 28.*—Just above the upper wing dam, near station 10, the 30-foot channel was lacking for about 500 feet in length, and 28.7 feet was found as the least depth, in the intervals, for the deepest channel.

*August 28.*—Between near stations 10 and 20, for 800 or 900 feet in length the 26-foot channel was less than 200 feet wide, its least width being about 150 feet.

*September 4.*—Near station 10, the 30-foot channel was lacking for about 750 feet, and about 29 feet was the greatest depth found.

*October 23.*—The 26-foot channel was deficient in width, opposite station 28, for about 200 feet in length, its least width being about 180 feet.

I certify that the above statements present truly the results of official surveys made at South Pass, Mississippi River.

M. R. BROWN,  
Captain Engineers, U. S. A.

OFFICE CHIEF OF ENGINEERS,  
Washington, November 20, 1879.

Respectfully transmitted to the honorable the Secretary of War.

This certificate is furnished by Captain Brown in compliance with instructions from the Chief of Engineers, of November 15, 1879, copy herewith.

The previous papers on the subject are herewith returned.

JOHN G. PARKE,  
Acting Chief of Engineers.

Respectfully referred to the Acting Chief of Engineers for his opinion upon the question whether the use of the dredgeboat as shown during the quarter for which payment is claimed was appropriate as an auxiliary to the maintenance of the channel, in view of the fact that reports previously made contemplated the possible necessity of future extensions of the jetties to preserve and maintain the channel. (See accompanying papers and page 5 of the within opinion.)

GEO. W. McCRARY,  
Secretary of War.

DEPARTMENT, November 25, 1879.

OFFICE OF THE CHIEF OF ENGINEERS,  
Washington, D. C., November 29, 1879.

HON. GEORGE W. McCRARY,  
*Secretary of War :*

SIR: In reply to instructions contained in indorsement of November 25, 1879, upon an opinion of the honorable the Attorney-General, of November 12, 1879, respecting the first quarterly payment for maintenance of channel through South Pass of the Mississippi River, to give "opinion upon the question whether the use of the dredgeboat as shown during the quarter for which payment is claimed was appropriate as an auxiliary to the maintenance of the channel, in view of the fact that reports previously made contemplated the possible necessity of future extension of the jetties to procure and maintain the channel," I have respectfully to submit the following:

In the first place, I beg leave to refer to the report, dated January 13, 1875, of the board constituted under section 3 of the river and harbor act of June 23, 1874, and especially to the following extracts:

The methods which have been proposed for opening a passage through a bar at one of the mouths of the Mississippi are two:

First, by stirring up in some way the material of the bar, so that the current shall sweep it away into deep water; second, by confining a mouth of the river by jetties on the bar, so that, aided, if necessary, by dredging or stirring up, the water shall be able to scour a channel through the bar, and to maintain it when once formed.

If, starting from a point in a pass above its bar, where there are now 30 feet of water, we build jetties which so confine the pass that it shall have the width all the way to deep water it now has at the starting point, we shall be helping the pass to assume the deep-water cross section it would ultimately take, and by aiding it, if necessary, by dredging, should be able to reduce at pleasure the time required for the process.

The South Pass has the advantage that the works for its improvement, which would require at least two or three years for their execution, would in no way interfere with commerce. The board is, therefore, of opinion that if any natural outlet is improved, it should be the South Pass.

For the improvement of the South Pass, the board recommends parallel dikes or jetties, constructed of brush, fascines, and stone, in the same general way as those used by Mr. Caland at the mouth of the Maas.

These dikes should begin at the two banks of the pass, about 1,650 feet below the South Pass light-house, where the river has a width of nearly 900 feet, and a maximum depth of 30 feet. They should run in straight lines parallel to each other, in the direction of the pass, to where the water is 30 feet deep outside of the bar, provided it should be necessary to carry them so far to secure 30 feet depth.

The question of the average annual expense of prolonging the jetties is a very serious one; it depends on the annual advance of the 25-foot curve, that depth being required.

In an average of many years the rate of progress must be about the same as now, namely, 100 feet per annum, the volume of water being kept as at present; and it is on this basis that the average annual cost of extension, namely, \$130,000, has been computed.

This steeper slope seaward from the 30 feet of water between the jetties would give a shoal of 25 feet at a distance of less than 2,200 feet, and in a period of less than twenty-two years. The period is uncertain; experience alone can determine the precise time. Different estimates made by this method, and others by different members of the board, vary largely, and ten years have been assumed for the purpose of estimate. In ten years, then, it is assumed that the jetties will have to be lengthened 1,000 feet. As shoals will have formed at the ends of the jetties, it has also been assumed that the extension will be in water averaging 15 feet in depth.

The construction and maintenance of the jetties beyond the crest of the bar is a difficult work, in which there will be contingencies arising from the action of heavy

storms, either on the jetties themselves or on the material on which they rest, and from settling.

If the jetties are constructed and maintained, the ends being prolonged as becomes necessary, the board has no doubt that the desired depth will be obtained.

The report of the board was submitted to Congress, and the river and harbor act of March 3, 1875, made provisions for the improvement of the South Pass of the Mississippi River, from which the following extracts are taken :

SEC. 4. That James B. Eads, of Saint Louis, Missouri, be, and he is hereby, authorized, with such others as may be associated with him, on the conditions hereinafter mentioned, to construct such permanent and sufficient jetties and such auxiliary works as are necessary to create and permanently maintain, as hereinafter set forth, a wide and deep channel between the South Pass of the Mississippi River and the Gulf of Mexico, and for that purpose he may construct, in the river, outlet, or pass, and likewise in the Gulf of Mexico, such walls, jetties, dikes, levees, and other structures, and employ such boats, rafts, and appliances as he may, in the prosecution of said work, deem necessary.

SEC. —. That the conditions herein prescribed being fully complied with, the United States hereby promise and agree to pay to said Eads, or to his assigns or legal representatives, five million two hundred and fifty thousand dollars for constructing said works and obtaining a depth of thirty feet in said channel, and the annual sum of one hundred thousand dollars for each and every year that said depth of thirty feet shall be maintained by the jetties and auxiliary works aforesaid in said South Pass during twenty years after first securing the said depth.

SEC. —. That after said channel of thirty feet in depth and of not less than three hundred and fifty feet in width, shall have been secured, one hundred thousand dollars shall be paid in equal quarterly payments during each and every year that said channel of thirty feet in depth and three hundred and fifty feet in width shall have been maintained by said Eads and his associates by the effect of said jetties and auxiliary works aforesaid in said pass, for a period of twenty years, dating from the date on which said channel of thirty feet in depth and three hundred and fifty feet in width shall be first secured.

The intent of this act is not simply to secure the wide and deep channel first above named, but likewise to provide for the construction of thoroughly substantial and permanent works by which said channel may be maintained for all time after their completion.

From these extracts, two things are required :

1. To create a deep channel.
2. To maintain it.

It appears from Captain Brown's letter of July 22, 1879, that the deep channel required by the act above quoted, and those amendatory of it, has been created and secured ; and that the contractor has entered upon the second phase of the improvement, *i. e.*, maintaining this channel for twenty years. At the expiration of the quarter terminating October 8, 1879, Captain Brown reports, October 15 :

The dredge G. W. R. Bailey has worked in all 190½ hours during this period, of which 111½ hours were for the purpose of maintaining the prescribed channel unimpaired, and 79 hours were devoted to restoring at various points channels which had previously deteriorated below the designated standard.

The question now occurs, is a dredgeboat an appropriate auxiliary or aid to be used in maintaining a channel once created and secured by the erosive or scouring action of the current, which is caused by the construction of jetties and auxiliary works with the aid of dredging contemplated and authorized only during the time required to create and secure the channel specified in the acts of Congress.

During the time required for the construction of jetties and auxiliary

works, the erosive or scouring action of the current caused by the jetties and auxiliary works was aided by the use of dredging. For a discussion of this question I beg to refer to the report of Generals Barnard and Wright of January 5, 1878. From a careful reading of this report, and the report of the board of January 13, 1875, taken in connection with the acts of Congress relating to the improvement of South Pass, I am clearly of the opinion that when a channel has been created and secured by the action of the current produced by jetties and auxiliary works, aided by dredging, the use of a dredgeboat for the purpose of maintaining that channel is not an appropriate appliance or auxiliary.

An examination of reports previously made shows that dredging was contemplated as an auxiliary, an aid, or an appliance to hasten the scouring or erosive action of the current, and thus create and secure at the earliest possible time the channel desired, but nowhere do I find in these reports any authority for the use of a dredgeboat as an auxiliary, aid, or appliance in maintaining or restoring to its required depth and width the channel previously created and secured. It is true that in previous reports on the subject of improvement of the mouth of the Mississippi River by jetties, the maintenance of an improved channel is stated to be a necessity, and the manner of that maintenance is discussed. A careful reading of these reports clearly indicates that to preserve and maintain an open river mouth, the extension of the jetties is a necessity. This matter is fully set forth in the report of January 13, 1875, and it is not necessary for me to do more than to call attention to the quotations previously made, especially to that portion relating to the rate of extension of jetties required, and the probable annual cost thereof.

The board in its report says :

If the jetties are constructed and maintained the ends being prolonged as becomes necessary, the board has no doubt that the desired depth will be obtained.

The act providing for the improvement reads :

\* \* \* the intent of this act is not simply to secure the wide and deep channel first above named, but likewise to provide for the construction of thoroughly substantial and permanent works by which said channel may be maintained for all time after their completion.

Very respectfully, your obedient servant,

JOHN G. PARKE,  
*Acting Chief of Engineers.*

---

EXECUTIVE MANSION, *December 2, 1879.*

In my opinion the shoaling of the channel did not obstruct navigation and was so slight that it may well be said that Captain Eads has substantially complied with the law and is entitled to be paid the amount now claimed for maintenance of the channel. This is, I understand, in accordance with the views of the cabinet, as expressed at the meeting to-day.

R. B. HAYES.

Respectfully referred to the Third Auditor. The demand of Mr. James B. Eads for \$25,000 for the maintenance of channel between July 8 and October 30, 1879, the same being the first quarterly installment of the annual compensation for maintenance of channel provided to be paid by act of March 3, 1875, and amendatory acts, is hereby approved, and settlement and payment will be made accordingly. (See 18 Stat.,

463; 20 Stat., 376, and act May 13, 1879; also certificates of Captain Brown, of October 15 and November 18, 1879; Opinion Attorney-General, November 12, 1879; letter of acting Chief of Engineers, November 29, 1879, and the order of the President of December 2, 1879.)

GEO. W. McCRARY,  
*Secretary of War.*

WAR DEPARTMENT, *December 2, 1879.*

○

LETTER

FROM

THE SECRETARY OF WAR,

TRANSMITTING

*Additional information in regard to first installment of compensation to Mr. James B. Eads for maintenance of channel at South Pass, Mississippi River, for the quarter ending October 30, 1879.*

JANUARY 21, 1880.—Referred to the Committee on Transportation Routes to the Seaboard and ordered to be printed.

WAR DEPARTMENT,  
Washington City, January 20, 1880.

SIR: I have the honor to transmit to the Senate additional papers concerning the payment of the first installment of the annual compensation to Mr. James B. Eads for maintenance of the channel at the South Pass, Mississippi River, for the quarter ending October 30, 1879, and to recommend that they be printed with the papers forwarded to the Senate in my letter of the 16th instant.

ALEX. RAMSEY,  
Secretary of War.

The PRESIDENT OF THE SENATE.

SAINT LOUIS, Mo., November 18, A. D. 1879.

HON. GEORGE W. McCRARY,  
Secretary of War:

SIR: I am in receipt of advices from the jetties, which show that since October 8 up to and including November 16 there has been much more than a twenty days' maintenance of the maximum channel required by law. As, under the recent decision of the Attorney-General, Mr. Eads was only required to maintain the maximum channel for twenty days in addition to the time that he had already maintained it, to entitle him to receive the first quarterly installment of the annual compensation for maintenance, and as the interests of the work require the payment of the money due at as early a day as possible, I have, very respectfully, to request you to issue such orders to Captain Brown as will require him to have his certificate in Washington without delay.

I am, very respectfully, your obedient servant,

ALEX. G. COCHRAN,  
Attorney for Mr. Eads.

## MEMORANDA.

1. The board of engineers, appointed December 21, A. D. 1877, in its report dated January 5, A. D. 1878, held that dredging was an appropriate auxiliary in the securing of the various channel depths and widths between the jetties. (See Ex. Doc. H. R. No. 37, 45th Cong., 2d sess., cited at length in argument to Attorney-General. See papers.)

2. In his official letter to the Secretary of War, Captain Brown (the inspecting officer at the jetties) uses the following language:

Is dredging allowable as a means of maintaining the channel, it having been clearly and repeatedly sanctioned as an auxiliary method by which the various depths and widths of channel, which were necessary precedents to the payment of the several installments of money, were obtained? Without instructions to the contrary, it would seem to be a natural inference that all the means heretofore used to obtain the channel might also be employed in its maintenance.

(See letter of Captain Brown, dated July 22, A. D. 1879, on file with the papers.)

3. The Chief of Engineers (General H. G. Wright), in his indorsement on above letter, without deciding the question as to the admissibility of dredging as an auxiliary to the maintenance of channel, recommends that "a *legal opinion*" upon the act, as applying to the question, should be obtained.

(See indorsement on above letter.)

4. On the 12th of November, A. D. 1879, a legal opinion was obtained upon the question from the honorable the Attorney-General, who decides as follows: "The channel is to be maintained 'by the effect of said jetties and auxiliary works.' If the use, therefore, of dredgeboats is strictly 'auxiliary,' while the general plan of the proposed improvement of Captain Eads is preserved, such use should not prevent him from receiving his compensation."

5. Since the above opinion was filed an officer of the Engineer Corps, in a report to the Secretary of War, holds as follows: "From a careful reading of this report, and the report of the board of January 13, 1875, taken in connection with the acts of Congress relating to the improvement of South Pass, I am clearly of the opinion that when a channel has been created and secured by the action of the current produced by jetties and auxiliary works, aided by dredging, the use of a dredgeboat for the purpose of maintaining that channel is not an appropriate appliance or auxiliary." The above conclusion was volunteered by the officer mentioned, and was not an answer to the question propounded by the Secretary of War.

(See opinion of General Parke, on file with papers.)

## MEMORANDA OF FACTS.

1. All of the reports, charts, surveys, and certificates furnished by Captain Brown, the inspecting officer, show that any dredging done by Mr. Eads was confined to the channel between the jetties, and had no relation to any bar deposit in front of the jetties.

2. All the reports, charts, and surveys show that there has been no bar formation in front of the jetties, and hence no extension of the jetties has become necessary. There has been a deepening in front of the jetties, instead of a shoaling.

3. The best evidence that the dredging was a mere aid or auxiliary lies in the fact that (as appears from the certificates on file) during a period of four months dredging was only employed for but eight or nine days.

## SUGGESTIONS.

It is not likely that, when the Chief of Engineers (declining to pass upon the question as to the admissibility of dredging) requested that a legal opinion in the premises should be obtained, he had any idea or wish that such opinion should be rendered by a subordinate officer of his own corps. The question as to whether dredging is allowable is a question purely of law, and the honorable Attorney-General has decided that under the law it is allowable, provided "the general plan of the improvement is preserved," and the dredging is simply an aid or auxiliary. Whether the dredging, as done, has been merely an aid or auxiliary, was a question of fact which the Attorney-General would not attempt to determine, but which he referred to the Secretary of War. The legal point he decided; the question of fact he declined to pass upon. Instead of confining himself to the consideration of, and report upon, the question of fact, General Parke delivers an opinion, in which he undertakes to overrule the honorable Attorney-General on the question of law.

It cannot but be remarked that there is no question of fact in dispute between the government and Mr. Eads. The records of the department settle any question which may arise. The appointment of a board of engineers can be in no sense necessary. Such board would not certainly be called upon to settle the question of law, especially when all questions have been decided by the Attorney-General; and as there are no facts in dispute, there are none to determine.

Mr. Eads should receive his money at once.

ALEX. G. COCHRAN,

*Counsel for Captain Eads.*

WASHINGTON, December 1, A. D. 1879.

---

WASHINGTON, D. C., November 3, A. D. 1879.

HON. GEORGE W. McCRARY,

*Secretary of War, Washington, D. C.:*

SIR: I beg leave to call your attention to the fact that on the 8th day of October last the first quarterly installment of the annual compensation for maintenance of the jetty channel became due to me from the government, and to request that you take such action in the premises as may be necessary to enable me to receive the money due without delay.

I am, very respectfully, your obedient servant,

JAMES B. EADS,

By ALEX. G. COCHRAN,

*His attorney in fact.*

---

SUGGESTIONS OF ARGUMENT BY CAPTAIN EADS'S COUNSEL.—NOVEMBER 10, A. D. 1879.

Captain Eads, by his counsel, respectfully begs leave to submit to the honorable the Attorney-General the following suggestions of argument as bearing upon the questions propounded by the Secretary of War in his letter of November 7, A. D. 1879.

The first question propounded is as follows:

1. "Does the law allow the use of dredgeboats in the 'maintenance by said Eads and his associates of a channel through said jetties,' or does

it require that the channel shall be 'maintained by said Eads and his associates by the effect of said jetties and auxiliary works,' without the use of dredgeboats?"

This is not the first time that the question as to whether, under the law, dredging was permissible has been raised. On the contrary, this very matter has heretofore received the careful consideration of the Secretary of War, and has been passed upon by some of the leading United States engineer officers. On December 15, A. D. 1877, Captain Eads secured through the jetties a channel 22 feet deep and 200 feet wide, which fact was duly certified to by the engineer officer in charge of the work (Capt. M. R. Brown). It appeared, however, that in the securing of this channel dredgeboats had been called into requisition, and that the depth and width of channel then secured was partially due to the action of such dredgeboats. Hence it was that when Mr. Eads demanded from the government the money then due (\$500,000), payment of the same was postponed until, *inter alia*, this question as to his right to use dredgeboats had been determined. On the 21st of December the Secretary of War appointed a board of engineers, composed of Generals Barnard and Wright, which officers were required to proceed in person to an examination of the works constructed by Mr. Eads at the mouth of the Mississippi River, and afterward to answer certain interrogatories which were propounded. On January 5, A. D. 1878, the board submitted its report, in which it fully discussed this question of dredging, and gave its views as to the meaning of the law. To that portion of the report we respectfully call attention.

NEW ORLEANS, LA.,

January 5, 1878.

SIR: In compliance with your orders of the 21st ultimo, we proceeded to Port Eads, arriving there Sunday evening, December 30, 1877, and made "a personal and thorough examination of the work now in progress, under charge of James B. Eads, for the improvement of the South Pass of the Mississippi River," and have the honor to report as follows:

Before proceeding to more general views and recommendations, we present the following answers to your interrogatories:

\* \* \* \* \*  
Interrogatory 2. Has such depth and width of channel been obtained by the action of such jetties and auxiliary works as are contemplated by the terms of the act of Congress aforesaid?

Answer. Section 4 of the aforesaid act authorizes James B. Eads and associates "to construct such permanent and sufficient jetties, and such auxiliary works, as are necessary to create and permanently maintain, as hereafter set forth, a wide and deep channel between the South Pass of the Mississippi River and the Gulf of Mexico; and for that purpose he may construct in the river outlet or pass, and likewise in the Gulf of Mexico, such walls, jetties, dikes, levees, and other structures, and employ such boats, rafts, and appliances as he may, in the prosecution of said work, deem necessary."

Section 5 of same act provides (among other things) that "when a channel of twenty feet in depth and of not less than two hundred feet in width shall have been obtained by the action of said jetties and auxiliary works, five hundred thousand dollars shall be paid; and when a channel of twenty-two feet in depth and two hundred feet in width shall have been obtained by the action of said jetties and auxiliary works, five hundred thousand dollars shall be paid," &c.

We have already, in our answer to the first interrogatory, reported that a channel "twenty-two feet in depth and two hundred feet in width" has been obtained. The interrogatory now to be answered is, "has such depth and width been obtained by the action of such jetties and auxiliary works as are contemplated by the terms of the act of Congress?"

The condition of payment, *i. e.*, that the specified depth and width shall be obtained by the action of "such jetties and auxiliary works," leads us into the consideration of what is meant by auxiliary works.

As *these*, in the language of the law, are coupled with the "permanent and sufficient jetties" which are to be constructed, and as further on he is more specifically authorized to *construct* in the river outlet or pass, and likewise in the Gulf of Mexico, "such

walls, jetties, dikes, levees, and other structures," &c., all of which appear to be structures fixed in location and attached to the bottom of the river, outlet, or pass, or as levees to the dry land, a rigid interpretation would appear to exclude the use, or rather to prohibit payment for channel depths and widths obtained with the aid of the well-known process of "scraping," "stirring up the bottom," or "dredging," and there can be no doubt that had either or all of these last-named means been the main agent or agents of obtaining the specified depths, payment could not, under the conditions of the law, be made for channel widths and depths so obtained, the jetty principle being notoriously the principle to be applied by the grantee. If, however, we refer to authoritative statements of the methods of applying that principle, we find it stated in the *Physics and Hydraulics of the Mississippi River* (p. 489, *reprint*), in treating of the "plan of jetties," that the "erosive action should be aided at first by dragging and scraping the hard portion of the bar." The Board of Engineers appointed by the President of the United States, under the act of Congress, June 23, 1874, to make "a survey of the mouth of the Mississippi River, with a view to determine the best method of obtaining and maintaining a depth of water sufficient for the purposes of commerce, either by a canal from the said river to the waters of the gulf, or by deepening one or more of the natural outlets of said river," in recommending the opening of the South Pass by the application of the jetty system, states: "By aiding, if necessary, by dredging, we should be able to reduce at pleasure the time required for the process"; and again, "This plan is then adopted \* \* \* to begin parallel dikes (i. e., jetties) at the banks, and carry them over the bar to 30 feet water outside \* \* \* allowing the river to erode the bottom between the dikes \* \* \* aiding the erosion by dredging or stirring, if it is not rapid enough." And in appendix to their report, an item of \$250,000 is found as the "estimated cost of dredging or stirring, in aiding formation of channel between the jetties and at the head of the pass."

The object of the act we are now considering is to "create and permanently maintain a wide and deep channel between the South Pass of the Mississippi River and the Gulf of Mexico"; and the Board of Engineers alluded to having been constituted expressly to determine the best manner of creating and maintaining such a channel, after having personally examined the most important works of Europe, recommended the jetty plan to be applied to the South Pass; and the report and estimate of that board being the basis upon which the compensation to Eads and associates was determined, we do not doubt that the real intention of the proviso in question was that jetties and auxiliary works should be the *effectual* agents of obtaining the "wide and deep channel" intended, while at the same time the references we have made show that dredging is a legitimate auxiliary.

We conceive, therefore, that the true intent of the proviso does not prohibit the auxiliary aid of dredging; that its spirit is as above defined; and that, indeed, in the authorizing of the employment of such boats, rafts, and appliances as he may, in the "prosecution of said work, deem necessary," *allows* dredging, and should not prohibit payment for channel widths and depths which the jetties and auxiliary works have, to all intents and purposes, really created, and to which dredging has been slightly auxiliary.

If we look at the actual facts presented by the prosecution of this work, we find that where, two and a half years ago, there was a bar at the mouth of the South Pass of over two miles of extent measured from 22 feet water inside to the same depth outside, over about half a mile of which there was but eight feet of water, a "wide and deep channel" of 22 feet depth now exists, and a result inferior in physical magnitude but no less in importance at the head of the passes has been obtained. And these results are so exclusively due to the "jetties and auxiliary works," that the auxiliary aid of "appliances," if in such we include dredging-machines, is utterly insignificant, consisting mainly, indeed, in a slight widening at two points and widening and deepening at a third. By the erosion of the current, due entirely to the jetties and their fixed auxiliaries, about two and one half millions of cubic yards of bottom material have been removed, leaving in its place the "wide and deep channel." Of this amount, one million of cubic yards have been removed by the same agency since the twenty feet of depth on the bar was obtained. By the action of the dredgeboats (see Captain Brown's recent report to the honorable Secretary of War) from *twelve to twenty-eight thousand* cubic yards have nominally been removed by dredging. But it cannot positively be asserted that to the creation of the channel now existing even this insignificant amount has been contributed by dredging. It is pertinent to remark, in this connection, that the creating of the 200 feet width of the 20-foot channel, for which payment has already been made, is officially reported to have been, to a small extent, aided by dredging. (See Major Comstock's sixth report.)

We have discussed the point of dredging at much length because we conceive it to be the real one involved in the third interrogatory, and we conclude by answering that, according to the construction above given, the depth and width of channel has been obtained by the action of such jetties and auxiliary works as are contemplated by the terms of the act of Congress.

(See Ex. Doc. H. R. No. 37, 45th Congress, 2d session.)

In the reasoning and conclusions of the board the Secretary of War concurred, and Mr. Eads received his money. Since that time dredging, to a greater or less extent, has been kept up. This fact is shown by all of the annual reports of Captain Brown. Payment after payment has been made to Mr. Eads by the government with full knowledge that dredging was being carried on, and it is not until this time that we are called upon again to meet a question which was supposed to have been forever settled. But it may be said that the decision referred to applied only to the rights of Captain Eads in the matter of *creating* the maximum channel, and can have no bearing now that the claim is not for creating but for *maintaining* the channel. A single moment's consideration will compel the conclusion that any such position is untenable. The same language identically is used in the 4th section of the act of March, A. D. 1875, in regard to the maintenance as is used in regard to the creation of channel. By the section referred to he is authorized to construct such works, &c., "as are necessary to create and permanently maintain a wide and deep channel." For the purpose of creating and maintaining such wide and deep channel, he is authorized to construct in the river, pass, and gulf such walls, jetties, &c., and employ such boats, rafts, and appliances as he may deem necessary, &c. But it may be said by the section of the act providing for the payment of an annual compensation for maintenance it is required that the channel shall be maintained "by the effect of said jetties and auxiliary works." This is undoubtedly true, but it is equally true that the same language was used in connection with the provision for the twenty-two feet payment. The language there is as follows: "When a channel of twenty-two feet in depth and two hundred feet in width shall have been obtained *by the action of said jetties and auxiliary works*, five hundred thousand dollars shall be paid." If dredging was permissible in the latter case, it must also be in the former. We do not think it necessary to add anything to what the board has said on the subject of dredging, or strive by further argument to strengthen the position taken in its report. We think that such position is manifestly correct. The certificate of Captain Brown and accompanying papers show that the maintenance of the maximum channel is due to the existence of the permanent works which have been erected, and that during the three months past dredging contributed but slightly thereto. By Captain Brown's letter (accompanying the certificate) it is shown that during the whole quarter the dredge-boat was only in use 190½ hours.

The next question propounded by the Secretary of War is as follows:

2. Under the circumstances stated in the engineers' certificate of October 15, 1879, herewith, are the legal conditions in reference to maintenance of the specific channel so far complied with as to legally deserve a quarterly payment for maintenance of the channel?

Or, in other words, is Captain Eads entitled to receive the full quarterly payment of \$25,000 even although it appears that during a brief period of the quarter (twenty days) the channel did not reach at all points the full depth and width specified in the law? All of the papers and charts filed by Captain Brown show that at no time during the quarter did such a shoaling occur as to deprive commerce of a navigable channel through the jetties. The fact is that the channel has been of ample depth and width to meet all the requirements of commerce. Throughout the greater part of its length it has far exceeded, both in width and depth, all the requirements of the law. True, there has been at some few points a temporary shoaling and at others a slight narrowing of the channel width, but a careful study of the charts will show that

the shoaling and narrowing at these points has already been accompanied by corresponding benefit to other parts of the channel.

These being the facts, the question is a pertinent one, whether the law has not been substantially complied with.

In all of his constructions of the various sections of the act of A. D. 1875, and the acts amendatory thereof, the honorable Attorney-General has not suffered himself to be controlled by the mere wording of such sections, but has sought rather to ascertain the intent of Congress by a reference to the whole act. It was evidently the purpose of Congress in passing these acts providing for the improvement of the South Pass that such a channel should be created and maintained as would be adequate to the wants of commerce. The channel which has existed through the jetties has been abundantly ample to accommodate all vessels seeking admission thereto. It has been, in the words of the law, "a wide and deep channel," and during the major part of the quarter has exceeded the depths and widths mentioned in the law. Now the question is, whether under these circumstances Mr. Eads has not complied with all the substantial requirements of the law so as to entitle him to a full quarter's payment? Has he not carried out all of the purposes for which the act was passed?

The third and fourth questions propounded by the Secretary of War are as follows:

3. What is the meaning of the law wherein it says the hundred thousand dollars "shall be paid in equal quarterly payments during each and every year," and wherein it further says, provided that "no part of such annual compensation shall be paid for any period of time during which the channel of said pass shall be less" than the required depths and widths? and

4. In the event that the maximum channel required by law has not been maintained during the twenty days specified in Captain Brown's report, can payment be made for maintenance during the remainder of the quarter?

These two questions relate to the same matter, and may be considered together. We understand the point of these questions to be simply this: Does the quarter mentioned in the law expire in three months from the date the maximum channel is secured, and is Mr. Eads then entitled to receive payment, proportionately, for the time he actually maintained such channel; or is Mr. Eads precluded from receiving any money until he shall have maintained the maximum channel for three full months? These questions assume that there must be an actual (not merely a substantial) maintenance of the maximum channel. Under this theory (without admitting its correctness) we proceed to consider them.

Did Congress intend, by the use of the language "one hundred thousand dollars per annum shall be paid in equal quarterly payments during each and every year that said channel \* \* \* shall have been maintained," that no money should be paid until there had been a maintenance of the channel for three full months? It is submitted that such would not be a fair construction of the act. If the section referred to stood alone, and without the proviso attached, there might be some reason for the construction above mentioned. It might then be said that the year referred to in the section was a year of maintenance; that the quarterly payments were to be equal in amount and were only to be paid for quarter (or three months') maintenance, and that there was not even implied authority for the payment of any less sum at any one time than one-fourth of the total yearly compensation. In other words, that the section of the law could be fairly read thus:

"After the maximum channel shall have been obtained, Mr. Eads shall be entitled to receive for each and every year that he maintains said channel, during the period of twenty years, the sum of one hundred

thousand dollars, which said sum shall be paid in equal quarterly payments during each year; but no part of such annual compensation shall be paid unless and until said channel shall have been maintained for the full period of three months."

That such was not the intent of Congress, however, seems apparent from the proviso which is attached to the section. This proviso is as follows:

No part of such annual compensation shall be paid for any period of time during which the channel of said pass shall be less than 30 feet in depth and 350 feet in width, as hereinbefore specified.

If the construction above suggested be the true one, this proviso was wholly unnecessary. If Congress intended that no money should be paid until there had been three months of actual maintenance, why add the proviso? If the meaning of the section be that suggested, then, under no circumstances could any money be legally paid, except upon the basis of an *actual maintenance* for three months, and the proviso is *insensible*. Among the rules of construction most familiar is that which provides that every part of a law shall (if possible) be given some meaning. That construction will always be given to a statute which makes every part of it operative, rather than a construction which gives effect to a part and makes a part insensible. Applying this principle to the present case, we find (assuming that the requirements of the law as to width and depth of channel must be strictly and not merely substantially complied with) that a construction can fairly be placed upon the whole section which will have regard to every part of it, and which will make every part effective. This construction is as follows: Under the law, when the maximum channel is obtained, the twenty years during which it is to be maintained begin to run. In three months after securing the channel, Mr. Eads shall be entitled to demand the first quarterly installment for maintenance. If he has maintained the channel for the full three months, he shall receive \$25,000. If he has failed to maintain said channel for any part of the three months, he shall only receive a proportionate amount of said sum. In other words, under no circumstances shall he receive any part of the yearly compensation unless he shall have maintained the maximum channel, and he shall only be paid for the time he has actually maintained such channel. In no case shall he receive more than \$100,000 for a year's maintenance, and this sum he shall only be entitled to receive annually for a period of twenty years. This construction is in accord with the language of the whole section, and gives full effect to the proviso. It fixes definitely the times at which payments shall be demanded and made, and protects the government from the payment of any money, except where it has received an equivalent therefor. It certainly is manifest that when Congress provided that "no part of such annual compensation shall be paid for any period of time during which the channel shall be less than 30 feet in depth and 350 feet in width" it intended that a *part* of the yearly compensation might be paid, provided there was a maintenance of such channel for a *part* of the year. In all cases where there is an express, mandatory provision in a law that no money shall be paid except in the event of a certain contingency, it always carries with it an implication as binding as an express enactment that, in the event of the happening of such contingency, the money *shall* be paid. Such is the case with this proviso. It is not to be assumed that, in one breath, Congress would particularly specify when and under what conditions money should be paid, and in the next breath provide that such money should not be paid unless the condi-

tions previously imposed had been complied with. Yet such must be assumed to have been the case unless the construction which we are contending for prevails. The use of the language "in equal quarterly installments" does not, in view of the wording of the whole section, necessarily exclude the payment of a less sum than the one-fourth of \$100,000. Surely the word "equal," as used, will not be held to be the controlling word of the section to an extent which will render the proviso meaningless. It is evident that, in using the word in its connection, the thought that perhaps there might be an uninterrupted maintenance of the channel was in the mind of Congress. In order to cover the contingency of a shoaling or narrowing, however, the proviso was attached. In effect, Congress says, "If you maintain the channel for full three months, you shall receive \$25,000. If you fail to comply with the requirements of the law in that regard, a proper deduction shall be made for such failure."

If we turn from the letter to the spirit of the law, the construction for which we are contending seems more manifestly the true one. In the passage of the jetty acts Congress had two great purposes to carry out—

1. The securing of a "wide and deep channel"; and
2. Its maintenance.

The interest of the government in the maintenance of this channel is of a twofold character: First, in that it affords an inlet and outlet to commerce; and, second, in that it represents an investment of \$4,250,000 of government money. It was well understood when the acts were passed that the maintenance of the channel, when secured, would require the expenditure by the government of a large sum of money annually. Mr. Eads undertook its maintenance for a much smaller sum than the actual cost of maintenance, as estimated by the commission of A. D. 1874, and Congress willingly provided for the payment of the annual sum mentioned in the act of A. D. 1875. The purpose of these provisions of the act was not to embarrass Mr. Eads, not to place a stumbling block in his path, but, on the contrary, to furnish him with every reasonable facility to maintain the channel when his great work had been accomplished. We respectfully submit that this is not a case for a narrow construction; not a case where the technical meaning of a word or a sentence should be alone regarded, and the great purpose which underlies the whole act be lost sight of. Since the 8th day of October Mr. Eads has been expending money in large amounts in the maintenance of this jetty-channel. He now comes and, asks simply that he may be reimbursed for his expenditures. Throughout the whole period he has maintained an undoubted navigable channel, and, with the exception of a brief period, has more than met the requirements of the law, however technically construed. We believe that the construction for which we contend is in accordance with the letter and spirit of the law, and that any other construction would tend to embarrass and delay the accomplishment of the great results which Congress intended should be accomplished, and for the securing of which so much government money has been expended.

#### MEMORANDA.

The following is the section of the act of March 3, A. D. 1875, relating to maintenance of channel:

SEC. —. That after said channel of thirty feet in depth and of not less than three hundred and fifty feet in width shall have been secured, one hundred thousand dollars per annum shall be paid in equal quarterly payments during each and every year

that said channe. of thirty feet in depth and three hundred and fifty feet in width shall have been maintained by said Eads and his associates, by the effect of said jetties and auxiliary works aforesaid in said pass, for a period of twenty years, dating from the date on which said channel of thirty feet in depth and three hundred and fifty feet in width shall first be secured: *Provided, however,* That no part of such annual compensation shall be paid for any period of time during which the channel of said pass shall be less than thirty feet in depth and three hundred and fifty feet in width, as hereinbefore specified.

By the amendatory act of March 3, A. D. 1879, the maximum channel required to be secured and maintained was reduced in depth and width. The following is the provision of the act of A. D. 1879, referred to:

The one hundred thousand dollars per annum provided by said recited act to be paid to said Eads and his associates during a period of twenty years shall be paid at the times and in the manner therein provided, upon the maintenance by said Eads and his associates of a channel through the jetties twenty-six feet in depth, not less than two hundred feet in width at the bottom, and having through it a central depth of thirty feet without regard to width.

LETTER  
FROM  
THE SECRETARY OF WAR,

RECOMMENDING

*That the papers of the 16th instant and those of the 21st instant, relating to compensation to Mr. James B. Eads, &c. [Ex. Doc. No. 44, Part 1, and Ex. Doc. No. 44, Part 2], be joined in one document, &c.*

JANUARY 26, 1880.—Referred to the Committee on Transportation Routes to the Seaboard and ordered to be printed.

WAR DEPARTMENT,  
*Washington City, January 22, 1880.*

SIR: I have the honor to recommend that the papers from this department, concerning the payment of the first installment of compensation to Mr. James B. Eads, for maintenance of channel at the South Pass, Mississippi River, sent to the Senate on the 21st instant and referred to the Committee on Transportation Routes to the Seaboard and ordered to be printed, may be attached to the papers touching the same matter which were transmitted to the Senate on the 16th instant and ordered to be printed and lie on the table. Otherwise the papers last transmitted would not be understood, and would be valueless.

ALEX. RAMSEY,  
*Secretary of War.*

THE PRESIDENT OF THE SENATE.

